



Hazardous Devices and Explosives... *A Special Kind of Haz-Mat*



Hazardous Devices and Explosives... A Special Kind of Haz-Mat

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*Hazardous Devices and Explosives...
A Special Kind of Haz-Mat*



Hazardous Material Incidents

 What can the Bomb
Squad Do for You?



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Common Haz-Mat Incidents
Involving Bomb Squads

 **Ether**

 **Picric Acid**



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Proper Disposal Methods

Ether

- Explosives used to vent the container and destroy the product through ignition of vapors
- Add an ignition source (fusee)



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Disposal Hazards

Ether

- Hand entry of container
- Movement of Container
- Fire hazard to surrounding combustibles
- Detonation Hazard – fragmentation



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Proper Disposal Methods

Picric Acid

- Destruction done by fire
- Remote ignition
- Build fire in a bed of fusees and shredded paper



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Disposal Hazards

Picric Acid

- Hand entry of container
- Movement of container
- Inadvertent detonation
- Ignition of surrounding combustibles



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Other Explosive Chemicals

💣 Bomb Squad can Do
Destruction

💣 Haz-Mat must determine
if it is appropriate



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*Weapons of Mass Destruction
(WMD) has added a new
urgency to the necessity of Bomb
Squads and Haz-Mat Squads
being able to operate together
efficiently*



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General Considerations

- 💣 Material must have explosive properties
- 💣 Must be a material that will be consumed by explosion/fire
- 💣 Waste hauler must have refused to handle material



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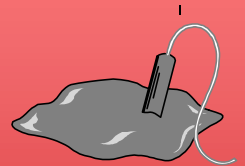


Commercial Explosives

💣 Transportation Accidents

💣 Found Commercial Explosives

💣 Found Military Ordnance





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Explosion

💣 The instantaneous
conversion of a solid, gas, or
liquid into a rapidly
expanding mass of gases



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Types of Explosions

 **Mechanical**



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Types of Explosions

 **Mechanical**

 **Chemical**



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Types of Explosions

 Mechanical

 Chemical

 Diffuse Vapor



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Types of Explosions

💣 Mechanical

💣 Chemical

💣 Diffuse Vapor

💣 Nuclear

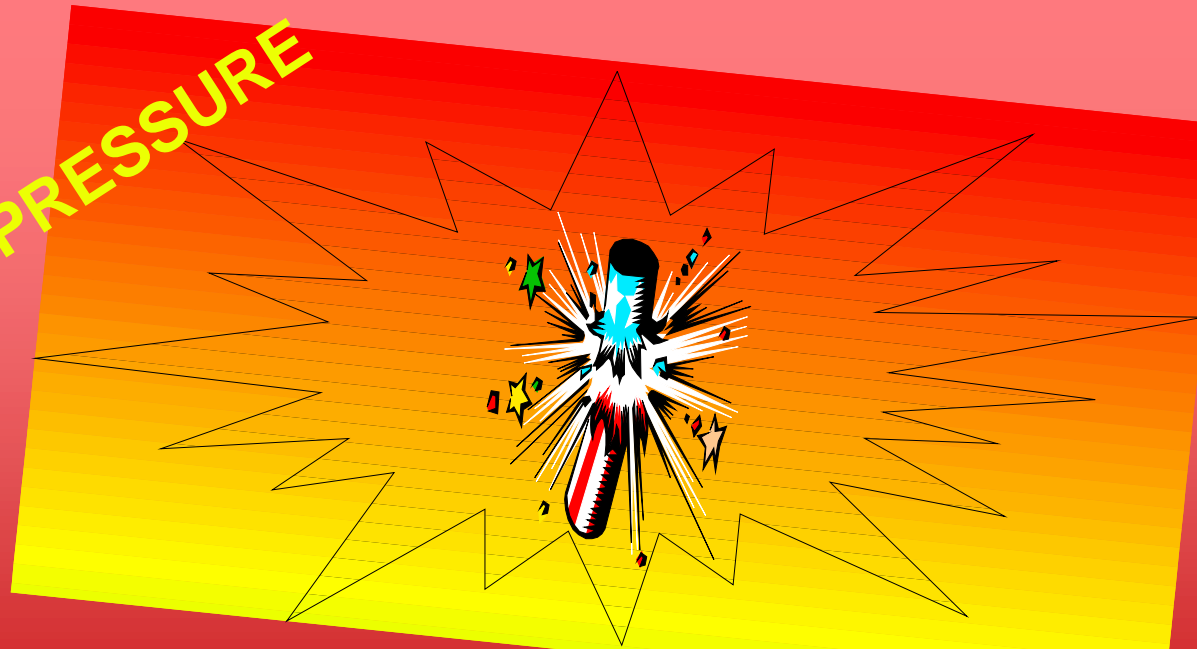


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Effects of an Explosion

BLAST PRESSURE



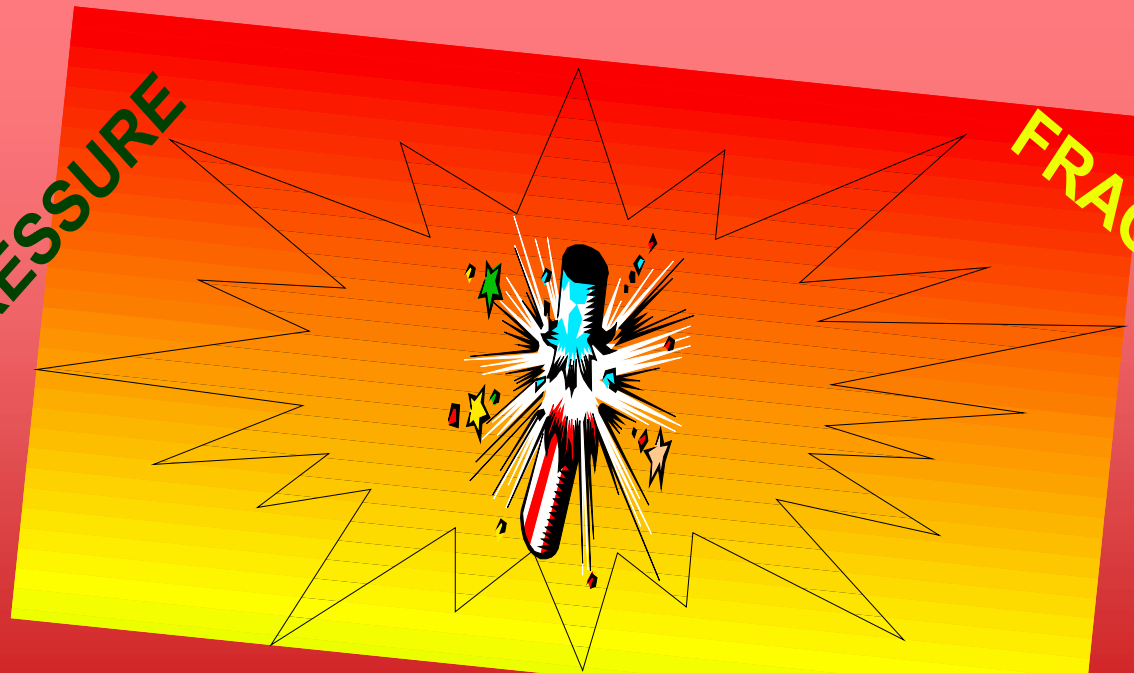


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Effects of an Explosion

BLAST PRESSURE



FRAGMENTATION



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Effects of an Explosion

BLAST PRESSURE

FRAGMENTATION

INCENDIARY THERMAL

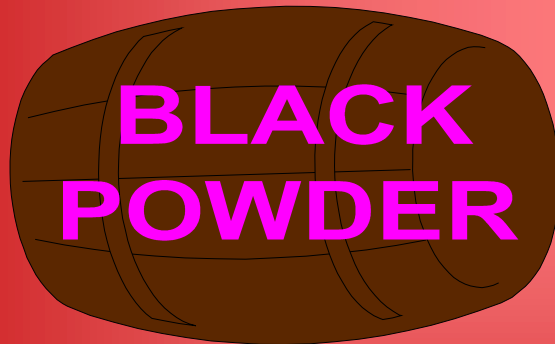
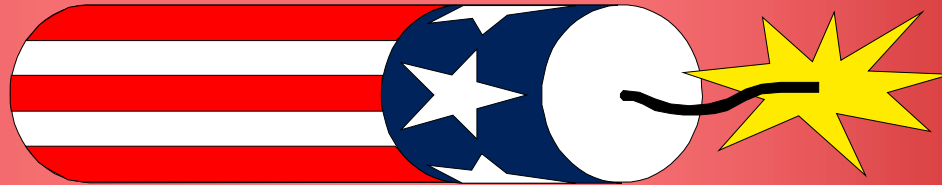


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**FLASH
POWDER**



**SMOKELESS
POWDER**



LOW EXPLOSIVES



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TNT

RDX

WATER GEL

DETONATING
CORD

C-4

PETN

BINARY

HIGH
EXPLOSIVES

DYNAMITE



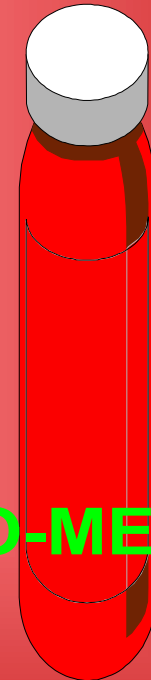
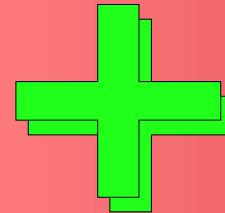


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AMMONIUM NITRATE



NITRO-METHANE

BINARY EXPLOSIVES



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Blasting Caps

 Shock

 Heat

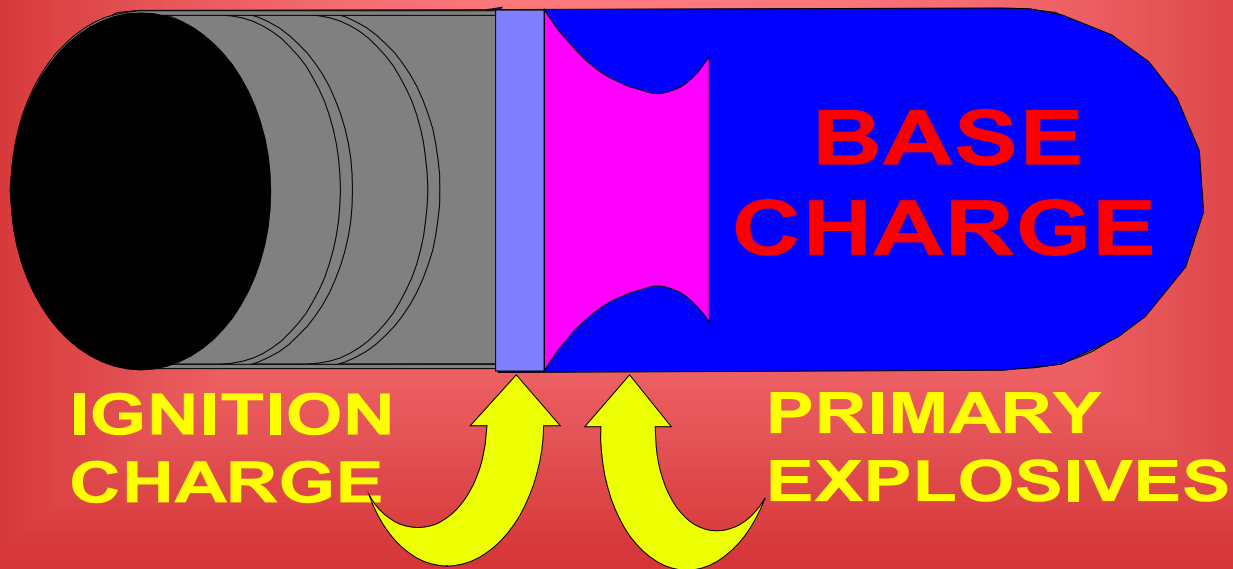
 Friction



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NONELECTRIC CAP

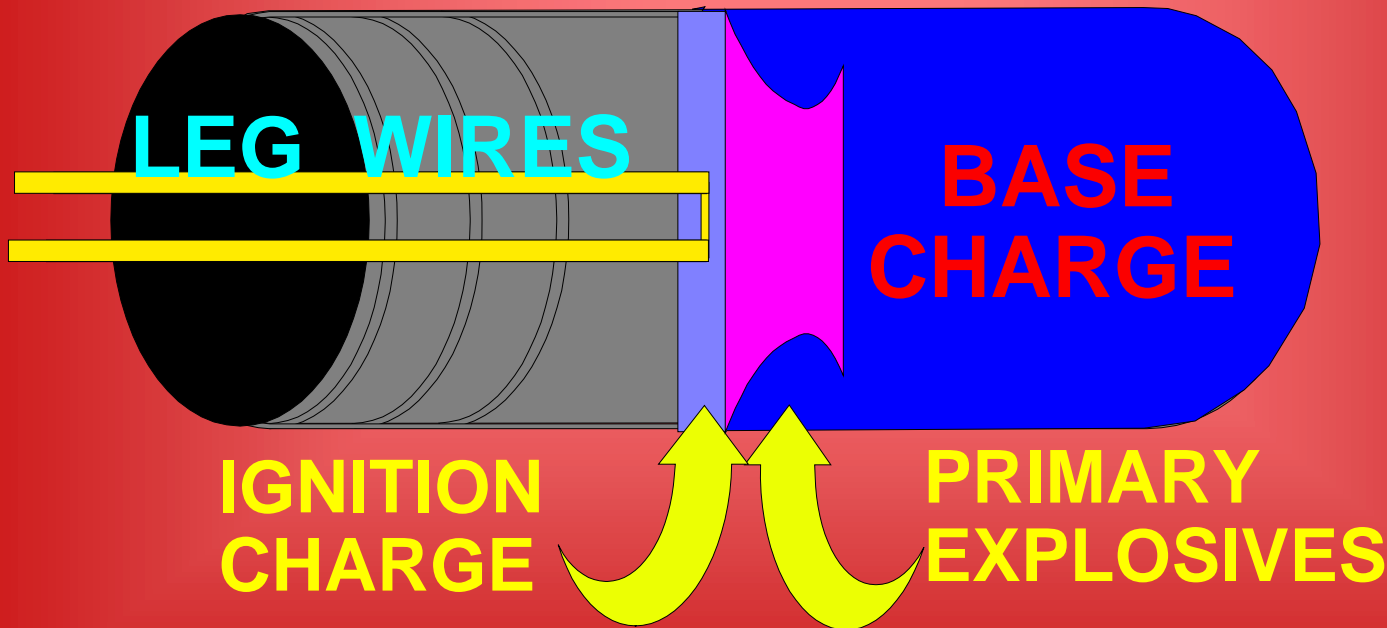




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ELECTRIC CAP





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**TWO STEP
EXPLOSIVE TRAIN**



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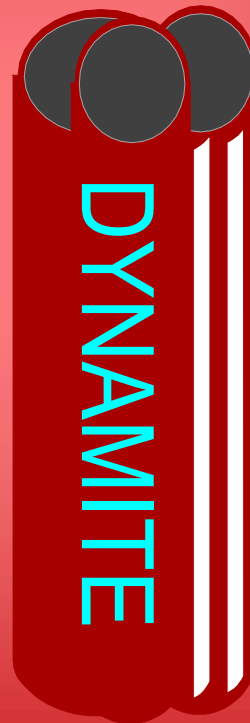
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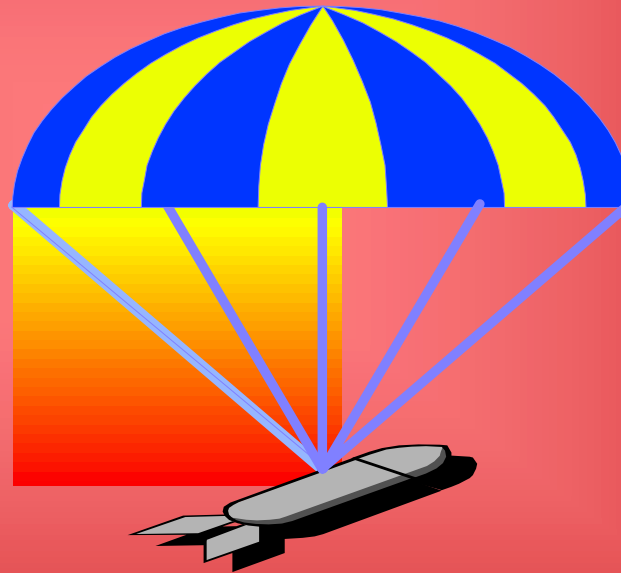
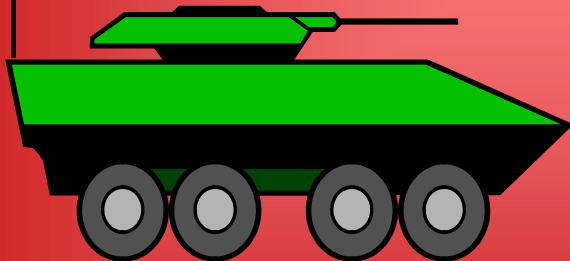
**FOUR
STEP
EXPLOSIVE
TRAIN**

SAFETY FUSE





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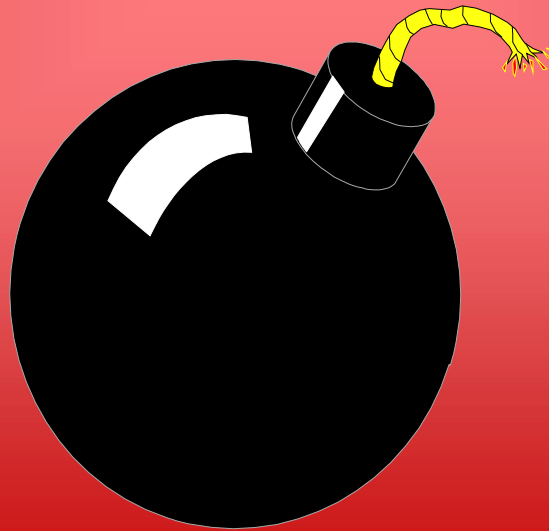
MILITARY EXPLOSIVES



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Improvised Explosive Device
(IED)





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California's Bombing Problem

- 💣 Has been #1 in bombings for the past decade
- 💣 1997 Statistics – 458 Bombs and Explosive Incidents in California
- 💣 FBI Bomb Data Center



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Methods of Initiation

 Time





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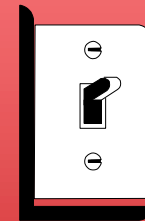


Methods of Initiation

 **Time**



 **Action**





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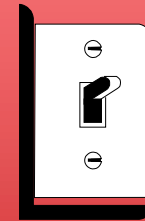


Methods of Initiation

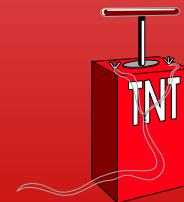
 **Time**



 **Action**



 **Command**





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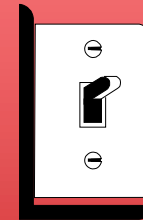


Methods of Initiation

 Time



 Action



 Command





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Multiple Methods of Initiation

💣 Arming vs Firing Switches

💣 Anti-tamper

💣 Anti-RSP



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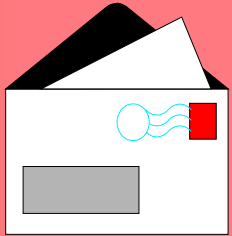


Secondary Devices

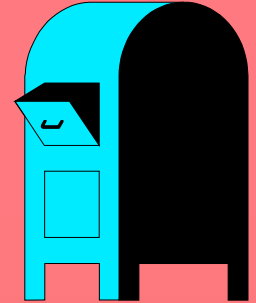
💣 Always Anticipate
the Possibility of
Secondary Devices



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Parcel Bombs



- 💣 Normally U.S. Post Office
- 💣 Private Delivery Service
 - Higher Probability of Detection
- 💣 Must Have Sufficient Bulk for Bomb



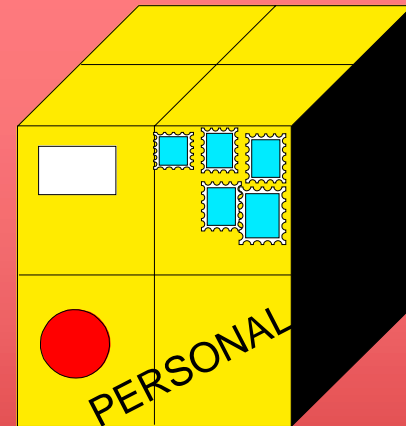
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Parcel Bombs

💣 Recognition Points

- Excessive Postage
- Incorrect Titles
- Excessive Weight
- Excessive Securing Material
- Restrictive Markings





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Actions Upon Discovery of IEDs

- 💣 **DO NOT TOUCH IT!**
- 💣 **Eliminate Radio Transmissions as possible**
- 💣 **Isolate Area (Minimum of 900 feet in all directions)**
 - Move people away from the bomb
- 💣 **Request Bomb Squad**
- 💣 **Gather as much Information as possible**



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IED's Containing HAZ-MAT

- 💣 Bomb Squad or Haz-Mat Team
- 💣 What Are the Most Significant Hazards
- 💣 Specialized Protective Equipment
 - Specialized Trade-Offs



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Sources of Information

💣 Military Publications (FM 5-31
Booby traps)

💣 Underground Manuals
– Anarchist Cookbook

💣 Computer Bulletin Boards

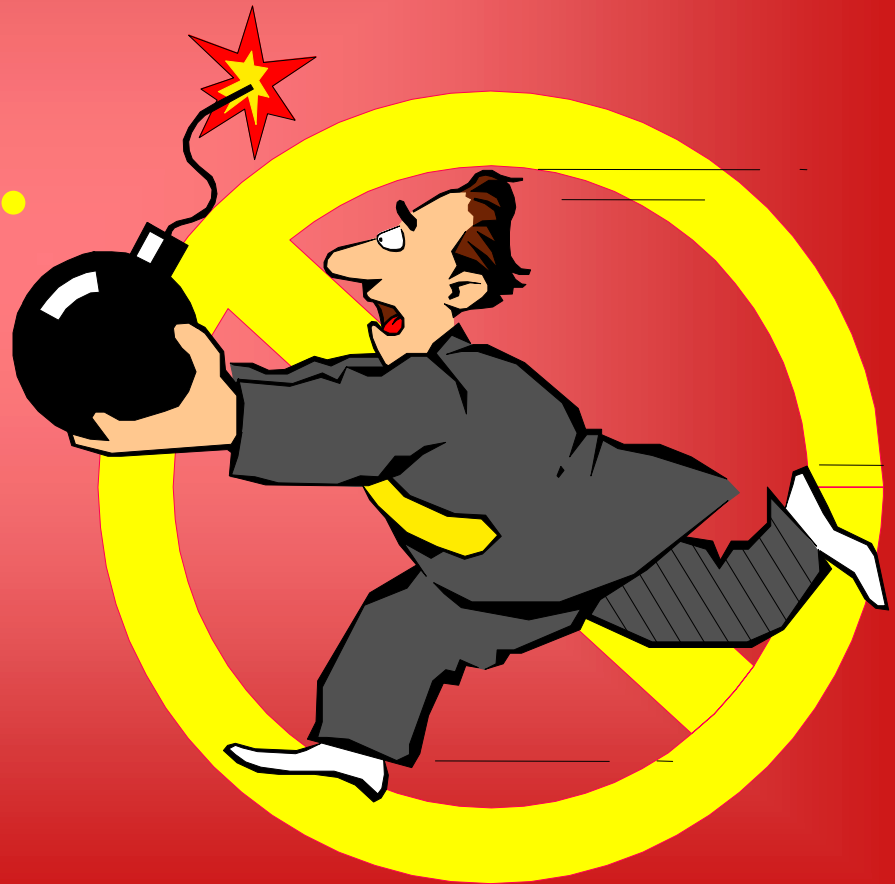




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The GOAL . . .






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For Assistance

 Call the local CDF
Emergency Command
Center (ECC)



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Your Instructor

 **Joe Konefal**

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